with a middle portion removed. The annular processing bag 1 is dimensioned and shaped for being placed in a centrifuge of a corresponding construction, also disclosed in said EP-B1-0304 431. The bag assembly is sterilized before use.

In accordance with the prior art principle of use, at least one buffy coat storage bag is connected to the first bag 1 via inlet tube 2, and the buffy coat in said storage bag is transferred to said processing bag 1. Preferably, the content of several such buffy coat bags, such as six bags, is transferred to the processing bag, dependent on the relative size of said bags.

The connection can take place by a sterile connecting method known in the art, such as shown in for example EP-A3-0 508 474. Otherwise, such connection can take place by sterile connectors 5, one of which is shown in Fig. 1. The exact way of transferring the buffy coat to the processing bag is not the object of the present invention and is not further described here.

Then, the inlet tube 2 is closed and the processing bag 1 is placed in a centrifuge and processed for a predetermined time in a predetermined G-field.

Finally, the light-weight fraction of the content of the processing bag, which is plasma enriched with thrombocytes, is transferred to the platelet storage bag 4 via the outlet tube 3, which normally comprises a cell filter, such as a filter for leucocytes, and the outlet tube is sealed and cut to provide the separated platelets in the storage bag 4. The remaining content of the processing bag is usually discarded.

According to the present invention, the cell filter is replaced by a cell trap as described more closely below.

A centrifuge rotor suitable for performing such a separation is shown in Fig. 2. The centrifuge rotor 10 comprises a centrifuge rotor plate 11 of the design shown in Fig. 2. At the periphery of the rotor plate 11, there is attached a ring 12, delimiting an annular, conically

depending pocket 14. The rotor plate 11 and the ring 12 are supported by a shaft 13 and are rotatable as a unit at a desired rotation speed by a motor (not shown).

The plate is provided with a membrane 15, which covers the bottom surface 16 of the annular depending pocket 14. The membrane is attached to the bottom surface at the inner periphery and the outer periphery of the membrane via a suitable adhesive or in another appropriate way. Then, there is formed a space 17 between the bottom surface 16 and the membrane which space is closed at the inner and outer periphery. Said space 17 is connected to a tube 18 extending via the shaft 13 to a rotational coupling and to a fluid source. By exerting a fluid pressure via said fluid source and said tube 18 inside said space 17, the membrane can expand upwards in Fig. 2 as further explained below.

The rotor plate 11 is provided with small studs 19 arranged in a ring close to the inner periphery of said membrane. The annular processing bag 1 is provided with several holes 6, which can engage said studs 19 as shown in Fig. 2 to place the bag 1 in position in the pocket 14 as shown.

Moreover, the centrifuge rotor 10 comprises a closure portion 20 which can be placed on the upper surface of the ring 12 and be maintained in position via locking members 21, similar to a bayonet lock. The closure portion 20 comprises a removable lid portion 22, which is attached to the closure portion 20 via locking members 23 similar to locking members 21.

Closure member 20 comprises a ring portion 24, which in the assembled position prevents the bag from becoming free from the studs 19 as shown in Fig. 2.

Closure member 20 further comprises a ring groove 25 close to the outer periphery as shown in Fig. 2. The ring groove 25 is adapted to enclose the outlet tube 3 of the bag assembly and place the outlet tube 3 at a radial distance from the shaft 13, which is the same or even greater than the processing bag 1. The outlet tube 3 has a length sufficient for encircling the processing bag 1 by approximately half a turn of one revolution. Thus, the outlet tube 3 has a length which is equal to

half the circumference of the processing bag 1 plus some extra portions for the radial extensions. It is possible to use a very short peripheral portion and using mainly the radial portions for the cell trap operation, as well as a peripheral portion which has one revolution or more.

Closure portion 20 encircles a central space 26, in which the platelet storage bag 4 is placed as well as the inlet tube 2. The lid portion 22 covers the central space 26 so that the content of the centrifuge rotor cannot escape during centrifugation.

The centrifuge rotor 10 is assembled as shown in Fig. 2 at the initiation of a centrifuge process. The lid portion 22 is removed and the inlet tube 2 is connected to a number of buffy coat bags and the contents thereof are transferred to the annular processing bag 1 positioned in the depending pocket 14. The outlet tube 3 can be closed by a clamp 27 (shown by broken lines) so that no buffy coat can enter outlet tube 3 by mistake. The transfer of the buffy coat to the processing bag can also take place in advance, so that the bag assembly is loaded in the centrifuge already provided with buffy coat to be treated.

Then, the clamp 27 is removed and the lid portion 22 is closed and the centrifuge is rotated to separate the contents of the processing bag 1 into a light-weight fraction enriched with platelets and a remainder comprising erythrocytes, leukocytes and other high density cells. Such centrifugation takes place at a predetermined G-field during a predetermined time, which is conventionally determined. There is no risk that buffy coat will enter outlet tube 3 during this process, since there is always enough space in the processing bag for the buffy coat.

When the centrifugation step is completed, the membrane 15 is activated and fluid is introduced in space 17 below the membrane via tube 18, while the centrifuge is still rotating at the same speed, or alternatively at a slower speed. The membrane 15 urges the bag 1 towards the bottom portion of closure portion 20 so that the volume of the bag is decreased and the content thereof is passed to the outlet tube 3. It is the light-weight fraction enriched with platelets that reaches the outlet tube 3 first since membrane 15 exerts a G-force balanced pressure on the outside of bag 1.